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THE PLUMB LINE

SPRING

Water Heater Edition

When we erect, install, enlarge, alter, repair, remove, convert, or replace any plumbing system, the installation of which is regulated by the code, or cause such work to be done we shall first make application to the code official and obtain the required permit for the work. Water heaters are in Chapter 5 of the Arkansas State Plumbing Code and are regulated by such. Lately we have seen some bad water heater installations; Gas heaters not being properly vented, T&P valves trapped or improper material, etc. Understandably, getting water heater replacements inspected can be a hassle. When you get your inspection, it is a written record to the customer that you have installed an important piece of equipment in a safe and reliable manner. If you fail to get an inspection and something fails on or around the heater and your customer contacts the inspection authority, you now have violated several code sections and may find yourself in front of the Board. You also may be installing a new water heater at no charge.

Having said that, here are some changes and some notable reminders from the 2018 Code:

504.6 Requirements for discharge piping. The discharge piping serving a pressure relief valve, temperature relief valve or combination thereof shall:
1. Not be directly connected to the drainage system.
2. Discharge through an *air gap* located in the same room as the water heater.
3. Not be smaller than the diameter of the outlet of the valve served and shall discharge full size to the *air gap*.
4 Serve a single relief device and shall not connect to piping serving any other relief device or equipment.
5. Discharge to the floor, to the pan serving the water heater or storage tank, to a waste receptor or to the outdoors.
6. Discharge in a manner that does not cause personal injury or structural damage.
7. Discharge to a termination point that is readily observable by the building occupants.
8. Not be trapped.
9. Be installed so as to flow by gravity.
10. Terminate not more than 6 inches (152 mm) above and not less than two times the discharge pipe diameter above the floor or *flood level rim* of the waste receptor.
11. Not have a threaded connection at the end of such piping.
12. Not have valves or tee fittings.
13. Be constructed of those materials listed in Section 605.4 or materials tested, rated and *approved* for such use in accordance with ASME A112.4.1.
14. Be one nominal size larger than the size of the relief valve outlet, where the relief valve discharge piping is installed with insert fittings. The outlet end of such tubing shall be fastened in place.

504.7 Required pan. Where a storage tank-type water heater or hot water storage tank is installed in a location where water leakage of the tank will cause damage, the tank shall be installed in a pan constructed of one of the following:
1. Galvanized steel or aluminum of not less than 0.0236 inch (0.6010 mm) in thickness.
2. Plastic not less than 0.036 inch (0.9 mm) in thickness.
3. Other *approved* materials.
A plastic pan shall not be installed beneath a gas-fired water heater.

Venting Tales

One such tale is that when roofers came to replace the roof, they inadvertently hit the vent and knocked it loose. This caused the vent to terminate in the attic. In at least one case this has led to a fatality. This is not something we as plumbers can fix, however it is our responsibility to make sure the venting is up to code when we replace a water heater. Usually this is as simple as climbing into the attic and making sure the vent is intact. **Do not allow a gas appliance to be operated with out proper venting.** If a homeowner tells you they will take care of it, do not connect gas to the appliance and contact either the local inspector or your state inspector. Another Scary tale, a plumber changed out two tank type 50gal. cat. I heaters to one 199,000btu category IV tankless heater. The plumber terminated the plastic sch40 vent in the existing type B vent. (The code violations for this alone are too numerous for this article.) The homeowner, of course, had a wet ceiling and called the plumber back. This time the plumber connected the Cat.IV vent to the plumbing venting system. Again, the code violations are too numerous to note in this article. Let's just say that obviously a gas vent terminating in a plumbing vent is of great concern as a health risk and dangerous situation.

FINES AND PENALTIES

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